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March 16, 2001

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Ms. Magalie R. Salas
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: Written *Ex Parte* Presentation of US GPS Industry Council
ET Docket 98-153

Dear Ms. Salas:

Pursuant to Section 1.206 of the Commission's Rules, 47 CFR Sec. 1.1206, please find enclosed a written ex parte presentation that was on this date sent to the Commission personnel listed in the attached letter.

An original and one copy of this letter are being submitted for inclusion in the record of the subject proceeding.

Respectfully submitted,

Raul R. Rodriguez
For the US GPS Industry Council

RRR/rjc

Enclosure

United States
GPS Industry Council

March 16, 2001

Dr. William R. Brody
President
Johns Hopkins University
Garland Hall 242
3400 North Charles Street
Baltimore, MD 21218

Reference: Johns Hopkins University Applied Physics Laboratory (JHU-APL)
"Final Report UWB-GPS Compatibility Analysis Project", 8 March 2001
Prepared by the Strategics Systems Department the Johns Hopkins University/Applied Physics Laboratory

Subject: Request Your Action to Review and Clarify Report Findings

Dear Dr. Brody:

On March 12-13, 2001, Ned Brokloff of the Applied Physics Laboratory (APL), Johns Hopkins University, presented the referenced report findings to the RTCA Special Committee 159 (Working Group Six) and other organizations present, including U.S. government agencies and airlines, in a meeting in Washington, D.C. Dr. Christopher Boswell, JHU-APL, was present for the question and answer period following this presentation. The referenced JHU-APL report, analyzed test data supplied by the University of Texas at Austin, in an effort to determine the impact of ultrawideband (UWB) device emissions to Global Positioning System (GPS) receivers. The results of the referenced report have been provided by JHU-APL staff to the Federal Communications Commission (FCC) in a meeting on March 8, 2001 in connection with the FCC's ET Docket 98-153. This JHU-APL report will influence regulatory decisions on the technical feasibility of allowing UWB transmissions to operate in the GPS frequency band currently restricted for safety-of-life and on developing regulations for permitted UWB emission levels.

Meeting participants observed to the JHU-APL analysts, including Tom Thompson, who participated in the meeting by teleconference, that:

- The referenced report states that for UWB devices with average powers that are compliant with the current FCC Part 15 regulations, the performance of GPS receivers exhibits severe degradation when the separation between the GPS receiver and UWB devices is less than about 3 meters. Meeting participants disagreed with the arbitrary criteria used for the selection of the 3-meter separation. Data in figures from Chapter 6 of the referenced JHU-APL report contradict this conclusion.

- Meeting participants observed that a device emitting at the Part 15 average power limits in the GPS frequency band result in a received power at a GPS antenna 3 meters away at a level 24.3 dB above the receiver's ambient noise level. To be consistent with commercial GPS operation, this level would have to be reduced by at least 20 dB (even more so for aviation safety-of-life), which would increase the equivalent range by a factor of 10. This observation is inconsistent with the conclusion JHU-APL report contains. Meeting participants perceived that the actual power level of the device used in the test may be less than the average power limit of a Part 15 device. The actual level for the onset of unacceptable degradation is a factor of 100 lower in power based on international standards, ITU-R M.1477. Meeting participants believe that there is a discrepancy between the FCC Certification Laboratory emission levels and the actual spectrum analyzer measurements from the University of Texas, Austin, which may explain this discrepancy.

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- Meeting participants believe that:

    - improper factors were used in the conversion of attenuator settings from the test to range values reported in the results.

    - Introduction of a range relationship implies that a scenario dependent link budget was employed when, in fact, it was not.

    - The criteria used for severe degradation is not consistent with safety-of-life applications that demand high GPS availability, continuity of service and integrity. These applications should require an additional 10 dB; E911 deserves further consideration.

From the Executive Summary of the referenced report: "Based on this report and the inputs from other organizations, JHU/APL believes that sufficient information is available for the FCC to establish criteria for regulating UWB emissions. Methodologies such as those presented in this report can be used to help the FCC evaluate the application of these criteria." RTCA SC-159 (Working Group 6) observes that it is inappropriate for JHU-APL to judge the sufficiency of the record in the UWB proceeding. This final conclusion is inconsistent and unsupported by data in the body of the report to make this judgement and, is too general and sweeping beyond the scope of the evaluation focussing only on the GPS band (please refer to the National Telecommunications Information Administration [NTIA] Special Publication 01-43, "Assessment of Compatibility Between Ultrawideband Devices and Selected Federal Systems".)

However, Time Domain Corporation, the funding source of the referenced report, widely disseminated a press release on March 9, 2001, stating that the FCC can proceed to a rule-making, citing the JHU-APL report as a principal reason (please refer to the attachment).

The JHU-APL analysts were repeatedly requested by the participants to correct both the stated power and distance errors. The JHU-APL analysts stated that they would not publish any changes and that their report stands as is.

Consequently, the U.S. GPS Industry Council wishes to inquire whether Johns Hopkins University management will take action to clarify these issues. We would be happy to discuss this matter in further technical depth at your convenience.

Sincerely yours

Chairman
U.S. GPS Industry Council

Cc: The Honorable Ted Stevens
The Honorable Conrad Burns
The Honorable John D. Rockfeller, IV
RTCA SC-159 (Working Group 6)
FCC Commissioner Powell
FCC Ex Parte ET Docket 98-153
Interagency GPS Executive Board (IGEB)
Interdepartment Radio Advisory Committee (IRAC)